Advisory Board | Service Line Advisor

# Caring for Respiratory Patients Throughout the Continuum

## Four Considerations to Better Serve Lung Patients

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# Service Line Advisor


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# Lung Disease Mortality and Costs Burden Health Systems

As one of the leading causes of mortality and an outsized spending driver, lung disease poses a serious challenge to global health systems. In the UK, lung disease has roughly the same mortality and financial impact as cancer or cardiovascular disease.

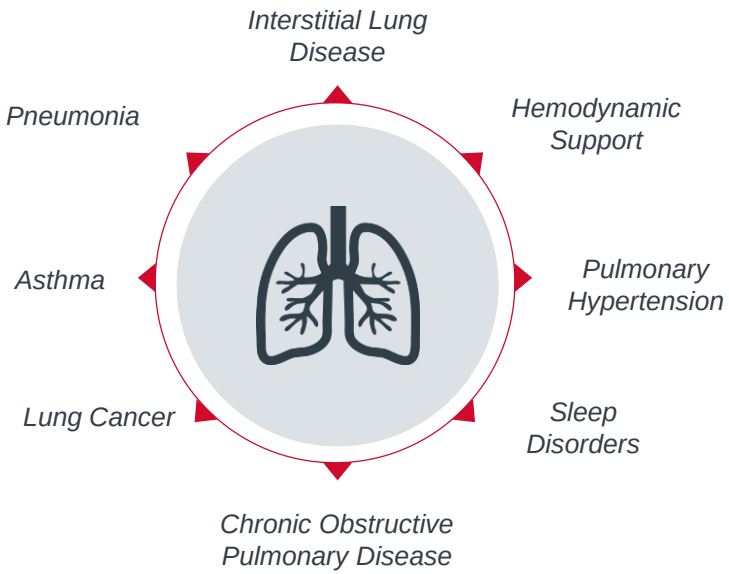
In fact, respiratory disease deaths are not lower in more economically developed countries than in others.[1] The average length of stay for respiratory patients, for instance, is higher in European Union countries than in Central and Eastern Europe, contributing to high lung care costs.[2]

Treatment remains disjointed, with health systems defining respiratory care in diverse and often inconsistent ways, including ILD, COPD, PH, pneumonia, and asthma—with some programmes offering lung cancer, mechanical ventilation, and sleep medicine services. As a result, there has been little to no improvement in overall lung disease-related mortality rates.[3]

This report focuses on how providers can improve care for lung patients moving from preventative through acute and post-discharge care.

## No Significant Improvement in Disease Mortality

**Common Respiratory Programmatic Areas**




8.2M

Deaths globally caused by lower respiratory infections, COPD, and lung cancer[4]

€380B

Total cost of lung disease in Europe[5]

0%

Change in lung disease-related UK mortality from 2008-2012[3]

1) Respiratory Health of the Nation, "COPD statistics," *The British Lung Foundation. See Appendix for rankings.*
2) R. Loddenkemper, G.J. Gibson, and Y. Sibille, "The burden of lung disease in Europe: data from the first European White Book," *Breathe,* vol. 1 (1): 2004.
3) Respiratory Health of the Nation, "Lung disease in the UK—big picture statistics," *The British Lung Foundation*.
4) World Health Organisation, "The 10 most common causes of death," World Health Statistics (2011).
5) European Lung Foundation, "Lung Health in Europe: Facts and Figures" (2013).

Source: Service Line Advisor research and analyses

# Common Patient Characteristics Complicate Respiratory Care

Three common characteristics make cross-continuum care for respiratory patients uniquely challenging.

Chronic or long-term illnesses take up significant clinician attention, medication, and bed space. Respiratory patients are also often have comorbidities and are elderly, limiting patient access to care and driving high readmissions. Moreover, patient noncompliance due to trouble with self-treatment, sometimes caused by overlooked psychosocial factors, complicates care.

As a result, respiratory patients require consistent management ranging from primary and secondary prevention through acute and post-discharge care.

## Three Common Pulmonary Patient Characteristics and Resulting Challenges

### Chronic or long-term

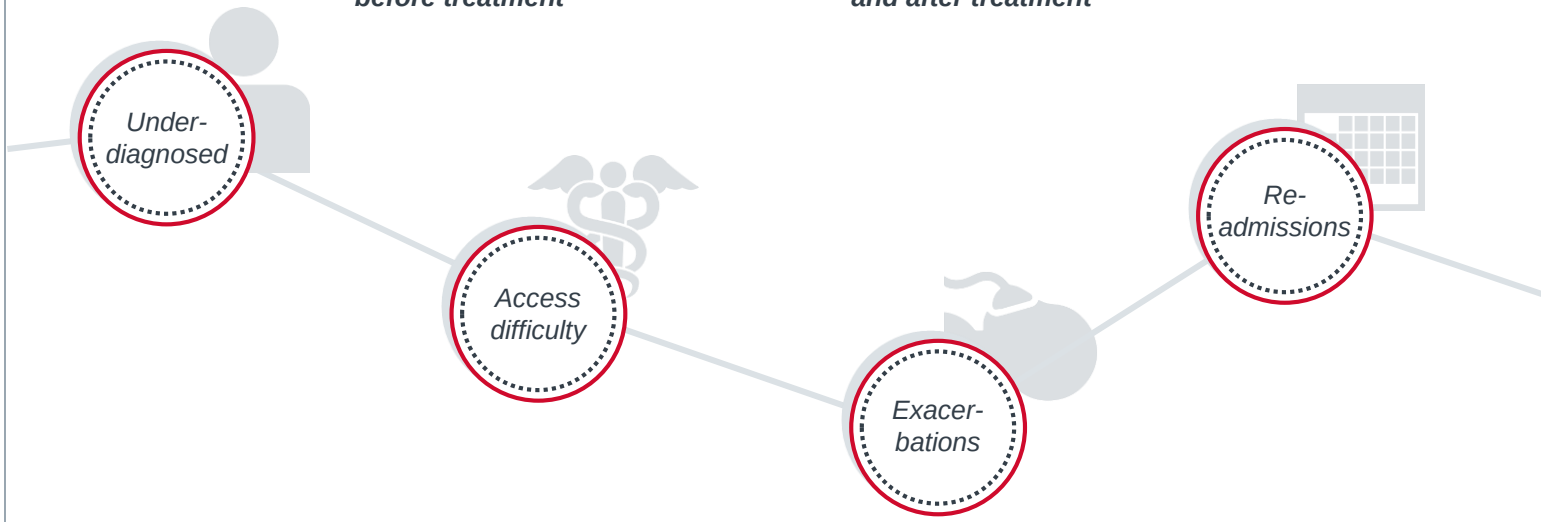
COPD, asthma, and metastasised lung cancer are incurable disorders that impact patients for a long time

### Comorbid and elderly

Most respiratory patients are likely to be older and have comorbidities; for instance, COPD most often occurs in people above 40 years of age

### Noncompliant

Patients are often non-compliant due to overlooked psychosocial factors and difficulty of disease self-management




Source: Service Line Advisor research and analyses

# Manage Referrals, LOS; Coordinate Clinicians and Community to Improve Care

These patient characteristics create challenges across the care continuum.

To begin with, respiratory patients are often diagnosed late. Once they are successfully diagnosed, access to a specialist can take a long time. Moreover, treatment for comorbid patients requires cross-service collaboration. Finally, readmissions of respiratory patients are high due to a lack of communication between specialists and community providers post-discharge.

Pulmonary programmes need to address these challenges to better manage patient outcomes and costs by ensuring appropriate diagnosis, timely access to specialty consults, consistent cross-disciplinary treatment, and efficient follow-up care in partnership with the community.

## Four Considerations to Better Serve Lung Patients

| ***Steps of the Care Continuum*** | **Diagnosis** *(p. 6-7)* | **Specialty Consult** *(p. 8-9)* | **Treatment** *(p. 9-10)* | **Follow-up** *(p. 11-12)* |
|---|---|---|---|---|
| ***Challenges*** | Delayed or inaccurate diagnosis | Capacity constraints and prolonged wait for visits | Inconsistent involvement of multiple experts | Lack of communication with community providers post-discharge |
| ***Solutions*** | Improve quality of referrals | Shorten length of stay and optimise use of day cases | Create interdisciplinary structures and use MDTs[1] | Partner with community providers and centralise discharge |

1) Multidisciplinary teams.

Source: Service Line Advisor research and analyses

# Underlying Causes and Similar Symptoms Drive Under-Diagnosis

Patients enter specialised respiratory programmes through a multitude of channels. They are externally referred from other hospitals, community clinicians, and GPs; or internally referred by doctors in other respiratory specialties, cardiology, oncology, and the ED.

Due to this multitude of entry points, respiratory patients are often seen by a number of doctors with different specialties prior to diagnosis.

Moreover, diverse patient populations fall under “pulmonology”—some are emergent (critical care), while others are selective and chronic (asthma, COPD). However, many of these patients show similar symptoms, making it even more difficult for doctors to accurately diagnose respiratory patients in a timely manner.

This is further complicated by the fact that some respiratory diseases are asymptomatic and can only be detected via the use of imaging technologies.

## Unclear Referral Pathway Slows Access to Care

### Reasons Behind Late or Inaccurate Pulmonary Disease Diagnosis

**Multiple referral channels**

Diverse patient entry points and referring clinicians

**Diverse patient population**

Recognition of symptoms challenging due to high variety of patients and similarity of symptoms

**Asymptomatic conditions**

Screening efforts limited in Europe and underutilised in the United States[1]

600,000

Australians have moderate-to-severe COPD of which they are not aware[2]

1/3

proportion of lung cancer patients who are diagnosed following an emergency hospital visit[3]

1) Jesper Holst Pedersen and Haseem Ashraf, “Implementation and organization of lung cancer screening,” *Annals of Translational Medicine,* vol. 4 (8): 2016; Miriam Szyncer-Taub and Catherine Kosse, “Lung screening programs are underutilised. Learn three ways to differentiate your programs,” *Advisory Board:* May 8, 2018.
2) Christine F. McDonald and Nicholas Glasgow, “The Burden of Obstructive Lung Disease (BOLD) study in Australia,” *Medical Journal of Australia,* vol. 198 (3): 2013.
3) “The battle for breath—the impact of lung disease in the UK,” *The British Lung Foundation* (2016).

Source: Service Line Advisor research and analyses

# Training Critical in the Absence of Comprehensive Screening Initiatives

Education on symptoms and risk factors combats inappropriate or late referrals.

For all external referrals, respiratory physicians need to make a serious and structured effort to educate their colleagues in the community, either directly through clinician-to-clinician interaction or indirectly through referral protocols.

While education of doctors in other specialties within the hospital is also important, automated EMR referrals offer an additional layer of support. In this system, patients tagged with respiratory diagnosis codes automatically receive a referral to a pulmonologist. Automated referrals can catch patients suffering from COPD or other respiratory diseases early and without placing additional burden on the clinician.

## Sample Tactics to Improve Diagnosis of Pulmonary Diseases

**Education of community clinicians**

Direct clinician-to-clinician interaction or community events

**Information protocol for internal referrals**

Mandating minimum information prior to referral approval

**Automated referral via EMR**

EMR system to automatically populate follow-up appointments or referrals for COPD diagnosis codes

### Royal Brompton and Harefield NHS Trust

- The Royal Brompton and Harefield NHS Trust Pulmonary Hypertension Service is one of 7 centres that make up the UK's national pulmonary hypertension (PH) service
- The centre's PH referrals have risen significantly due to increased community recognition of the disease
- However, many referrals continue to be inappropriate: about 65% of the patients referred for PH come from other hospitals and GPs, and a significant portion of these patients have unrelated diseases or non-treatable PH
- In response, the hospital implemented an information protocol for referrals, requiring diagnostics and testing prior to consult in the hope of decreasing inappropriate referrals

Source: Service Line Advisor research and analyses

# Volume of Hospital-Based Patients Limits Access to Pulmonary Specialists

Once patients are diagnosed, they often wait weeks to see a specialist.[1]

With high readmission rates and increasing respiratory disease prevalence, the number of respiratory patients entering through hospital doors is growing. Additionally, existing patients are resource-intensive and have prolonged hospital stays, contributing to capacity constraints.

Hospital capacity issues are most apparent in the undersupply of respiratory medical staff and long patient wait times for specialist visits. For instance, respiratory therapists and specially-trained respiratory nurses are in high demand across Europe as current need surpasses medical staff supply.

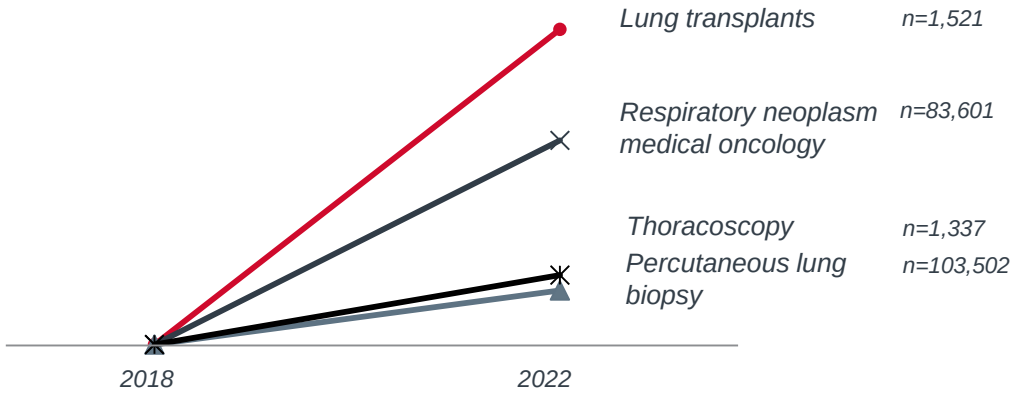
Moreover, the number of respiratory patients is likely to grow over the coming years. By 2020, COPD is projected is to be the fifth most common cause of combined mortality and disability.[2]

## Rising Disease Burden to Exacerbate Access Challenges

**Expected Growth of Lung-Related Procedures**[3]

*United States, Market Scenario Planner, 2018-2022*

*n=2017 volumes*




**25.2 days**

Average wait time for new respiratory consultation[1]

1) Chris Hayhurst, "The doctor will see you… sometime," *Athena Health:* December 11, 2017.
2) M J Connolly et al., "Admissions to hospital with exacerbations of chronic obstructive pulmonary disease: effect of age related factors and service organisation," *Thorax,* vol. 61 (20): 2006.
3) National Estimates for United States Utilization, Market Scenario Planner, *Advisory Board:* June 6, 2017.

Source: Service Line Advisor research and analyses

# Optimise Staffing, Manage Scheduling, and Dedicate Space to Reduce LOS

To combat capacity constraints, specialty programmes need to manage length of stay in order to maximise space for new patients and cut costs.

To that end, investments in staffing, operations, and infrastructure can help shorten patient time in hospital.

First, care coordinators and other non-specialist members of the clinical care team can manage patients across the entire care continuum. Evidence shows that proper care coordination results in reduced ED visits, increased survival, fewer readmissions, and shorter length of stay.[1]

Second, well-defined responsibilities for the different wards, staff, and players involved allows respiratory doctors to care only for the most urgent patients.

Third, many hospitals face clinical space capacity constraints in that there are not enough beds for respiratory inpatients and visit rooms for same-day patients. Ensuring the appropriate space and technology can enable hospitals to accommodate a higher number of patients.

## Focus on Keeping Low-Acuity Patients Same-Day Cases

**Three Areas of Improvement to Provide Better Patient Access**

### Staffing

- Hire dedicated respiratory care coordinator
- Appoint a lower cost clinicians, e.g. a nurse, to own recurring readmissions
- Rotate team of respiratory physicians to provide discharge sign-offs

### Operations

- Empower the scheduling department to set length-of-stay targets
- Use risk stratification to pre-select patients for specialty consult, leaving prevention and rehabilitation under the community's purview[2]

### Infrastructure

- Dedicate physical space for respiratory patients
- Invest in correct amount of applicable technologies (i.e., imagining machines, bronchoscopies, spirometers)

**UConn Health**

- UConn Health's Pulmonary, Critical Care, and Sleep Medicine programme in the US provides diagnostic, management, and critical care services for a broad range of respiratory diseases
- Due to shortage in clinicians, not all day case respiratory patients are able to be seen by specialists
- The hospital employed respiratory nurses as point-clinicians for chronic diseases and patients with recurring readmissions. They are also responsible for frequently calling COPD patients to deliver treatment over the phone

1) M. Camicia et al., "The Value of Nursing Care Coordination," *American Nurses Association:* 2012.
2) "COPD rapid access clinic," Royal Brompton and Harefield, website.

Source: Service Line Advisor research and analyses

# Comorbid Pulmonary Patients Demand Coordination of Multiple Specialties

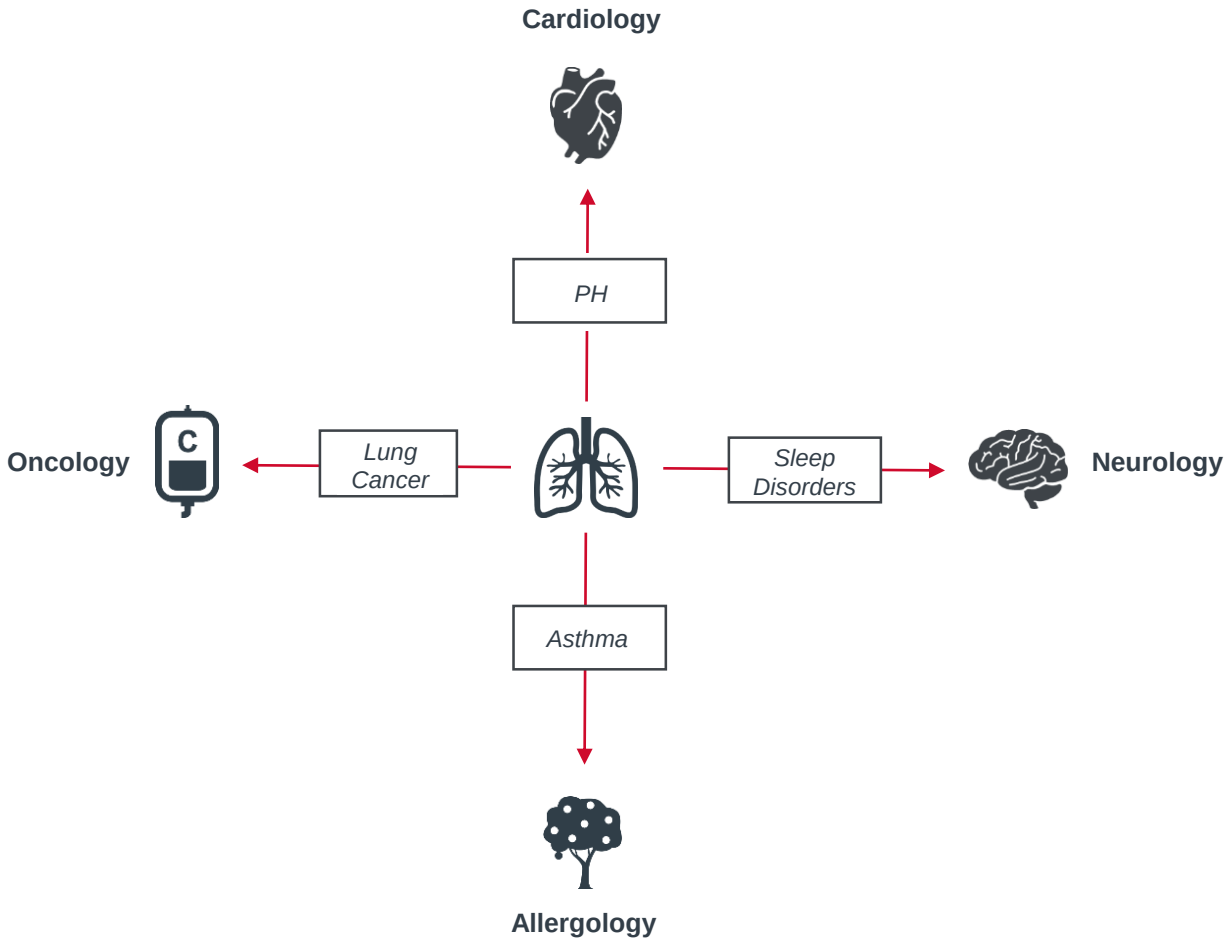
Pulmonary patients often have comorbidities and suffer from diseases that demand the attention of diverse specialties at the treatment stage. Providing holistic treatment in a scalable manner is a challenge for many hospitals.

Hospitals refer patients to different specialists for different diseases. Clinicians usually triage patients based on their immediate need (e.g., COPD, sleep disorder, asthma, cancer) and then struggle to reconnect them to respiratory medicine, where they can receive support in treating the failing lungs.

As such, care of respiratory patients is often not owned by a single ward, unit, or service line—but shared by many. This means that the respiratory patient may not see the most appropriate specialist, which compounds access and diagnosis issues as patients see a variety of specialists for lung-related diseases.

## Consistent Involvement of Relevant Specialists Remains a Challenge

**Service Lines Seeing Pulmonary Patients**




Source: Service Line Advisor research and analyses

# Adjust Management Structure to Facilitate Coordination of Service Lines

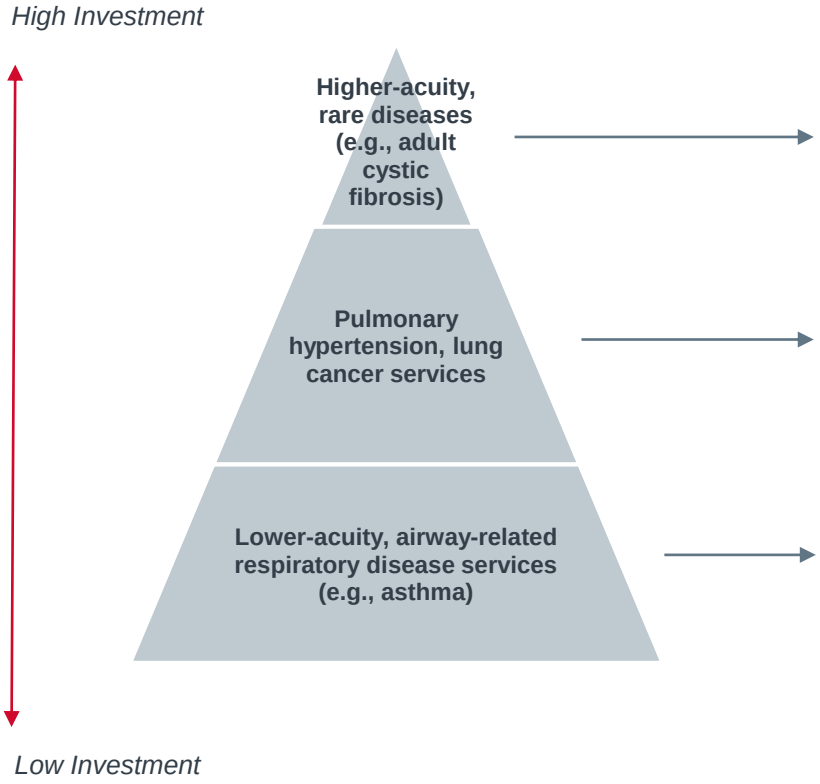
One solution lies in integrating respiratory providers with service lines covering common comorbidities. In this model, shared clinic space and reporting structures facilitate interdisciplinary communication and patient care.

UConn Health's Pulmonary, Critical Care, and Sleep Medicine programme provides a variety of lung-related services. Within that service line, the hospital developed a hybrid management ward for lung cancer patients, the Thoracic Oncology unit, to ensure cross-specialty collaboration. An interventional pulmonologist with experience in both specialties heads the ward and is responsible for the smooth transition of patients between services.

Multidisciplinary care teams (MDTs) provide an alternative to full integration. MDTs are groups of clinicians of different disciplines who together provide treatment to individual patients.[1] Hospitals involve MDTs to varying degrees depending on the availability of resources and type of services offered, but all find that a cross-service approach to developing treatment protocols improves quality of care for all respiratory patients.

## Design Multidisciplinary Team Specifically to Address Patient Needs

**Degrees of MDT Involvement**




**High MDT Investment**

- Daily MDT conferences for discussion of complex respiratory patients
- Hardwired communication protocols

**Intermediate MDT Investment**

- Occasional MDT conferences
- Programme supported by cross-trained staff

**Low MDT Investment**

- Clear cross-team referral
- Communication protocols encouraged for consultations

1) Health Service Executive, "Multidisciplinary Team," website.

Source: Service Line Advisor research and analyses

# Exacerbations Lead to High Readmission of Pulmonary Patients

Successful disease treatment is contingent on patient adherence because the majority of treatment options involve self-administered medications. In the absence of proactive patient involvement, respiratory diseases exacerbate.

Community providers play a critical secondary prevention role. They serve as partners to patients managing their own disease by helping prevent exacerbations. When follow-up care is executed poorly, patients and providers suffer from repeated ED visits or inpatient readmissions.

Unfortunately, high readmission rates reveal a gap of communication between specialty programmes, community providers, and patients.

## Conditions for Successful Self-Administered Treatment

### Medications

- Takes oral medication in a timely, consistent manner
- Knows the correct dosage

### Oxygen Therapy and Inhalers

- Can use inhalers correctly
- Knows how to self oxygenate when necessary

### Pulmonary Rehabilitation

- Attends all recommended pulmonary rehab sessions

*Exacerbation*

## Consequences of Inadequate Patient Self-Treatment

**1/3**

of COPD patients readmitted to the hospital within one year of discharge[1]

**$2,000**

Mean cost per asthma patient per year in Europe[2]

1) Timothy H. Harrier et al., "Hospital readmissions for COPD: a retrospective longitudinal study," *Primary Care Respiratory Medicine*, vol. 27 (31): 2017.
2) Carlos Nunes, Ana Margarida Pereira, and Mario Morais-Almeida, "Asthma costs and social impact," *Asthma Research and Practice*, vol. 3 (1): 2017.

Source: Service Line Advisor research and analyses

# Centralise Follow-Up Management to a Single Team

Because respiratory patients have difficulty managing their disease on their own, health systems needs to play an active role after discharge. This includes supported discharge where the hospital teaches methods of self-treatment, proactive referrals to community specialists (e.g., social care), and education of ED clinicians to recognise the symptoms of respiratory diseases.[1]

Evangelishe Lungenklinik Berlin centralised follow-up with one department. That department proactively schedules appointments for patients upon discharge and contacts high-risk patients to preempt exacerbation. In addition to reducing readmission, this also keeps the hospital involved with patient care and boosts retention.

## Both Internal and External Efforts Necessary to Improve Follow-Up Care

**Internal**

**Centralise Follow-Up Scheduling**

- Assigning scheduling and bed assignment responsibility to one department to guarantee smooth care coordination
- Hardwire follow-up appointments with repeated patient reminders

**External**

**Partner with Community Providers**

- Since prevention efforts usually live in the community, the involvement of GPs and local providers throughout the continuum is critical
- For example, smoking cessation is one of the most important elements of stable disease management

### Evangelische Lungenklinik Berlin

- Ev. Lungenklinik Berlin is a dedicated hospital for acute and chronic diseases of the lung and chest, and is one of the 10 largest respiratory hospitals in Germany
- About half of their patients are admitted for inpatient cancer treatment and all are referrals from elsewhere. Thus the hospital cannot be present at every step of the care continuum, especially post-discharge
- Ev. Lungenklinik Berlin has one centralised department that schedules follow-up appointment for every patient once clinicians communicate approval of discharge, ensuring patient return
- The hospital has lost only 0.2% of its respiratory patients to competitors

### Other Post-Discharge Tactics[2]

- Telehealth
- Pulmonary Rehab
- Internal Evaluation
- Hospital-Based Prevention

1) Eui-Sik Suh, Swapna Mandal, Nicholas Hart, "Admission prevention in COPD: non-pharmacological management," *BMC Medicine*, vol.11 (247): 2013.
2) See Appendix for other tactics advanced institutions have employed.

Source: Service Line Advisor research and analyses

# Keep Abreast of Emerging Technologies, Applications, and Therapies

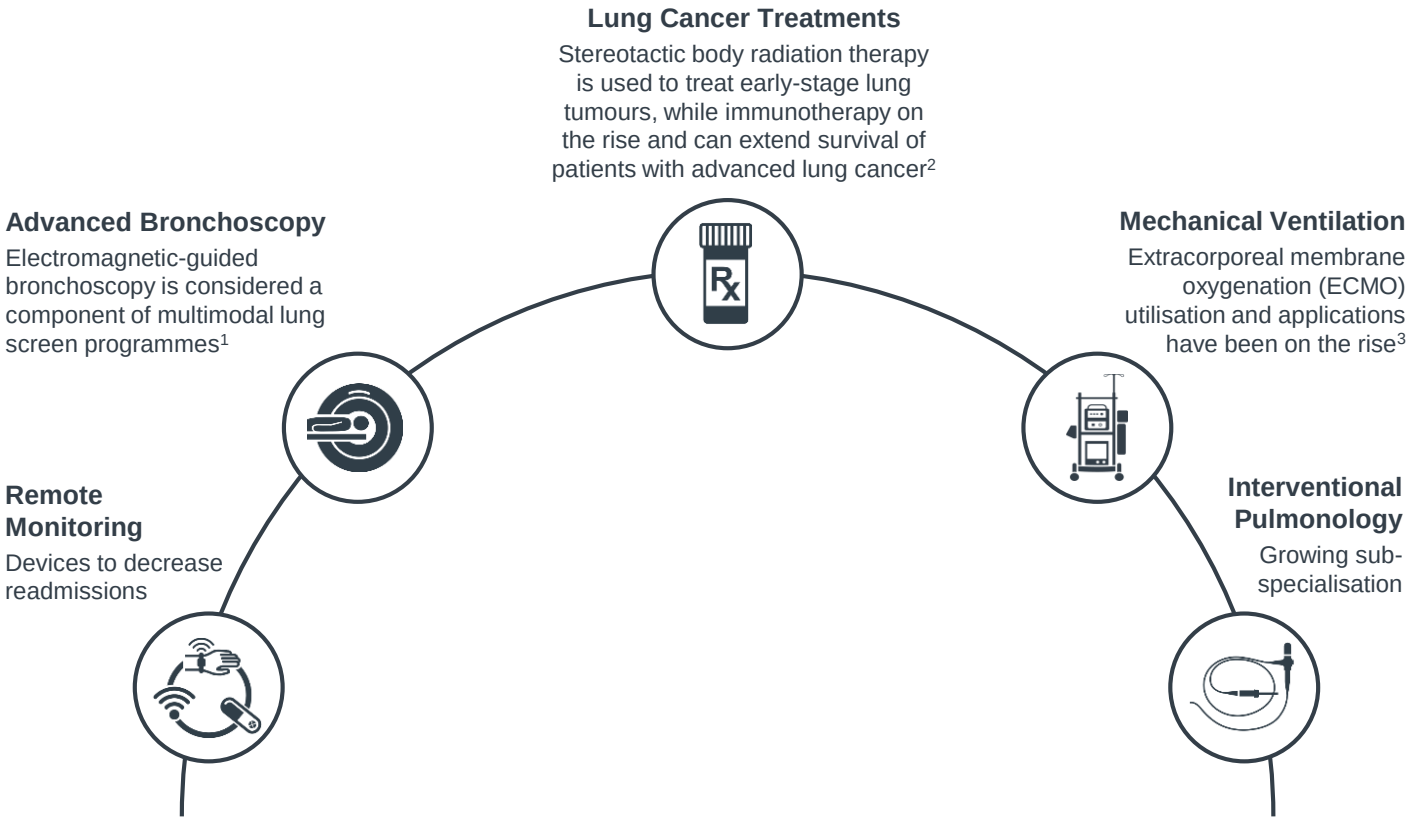
Over the coming years, advancements in respiratory care technology are likely to make care more effective. Newly developing lung cancer treatments, as well as refined imaging and ventilation technologies are expected to help chronic respiratory patients live longer lives.

As survivability is expected to increase, hospital outcomes for respiratory patients will also improve since care for conditions once-thought irreversible will become a possibility. Simultaneously, however, the chronic disease population will grow in volume, increasing pressure to manage capacity and operate as efficiently as possible.

These trends will push health systems to continued community partnerships and increasing out-of-hospital care. Furthermore, advancing technology will enable further sub-specialisation and opportunities to differentiate respiratory services.

## Pulmonary Advancements Make Care More Effective and Accessible

### Emerging Treatment Options




1) "Electromagnetic-guided bronchoscopy," *Advisory Board:* 2015.
2) "Oncology Clinical Technology Compendium," *Advisory Board:* October 2017.
3) "The Planner's Introduction to ECMO Investment," *Advisory Board:* March 7, 2018.

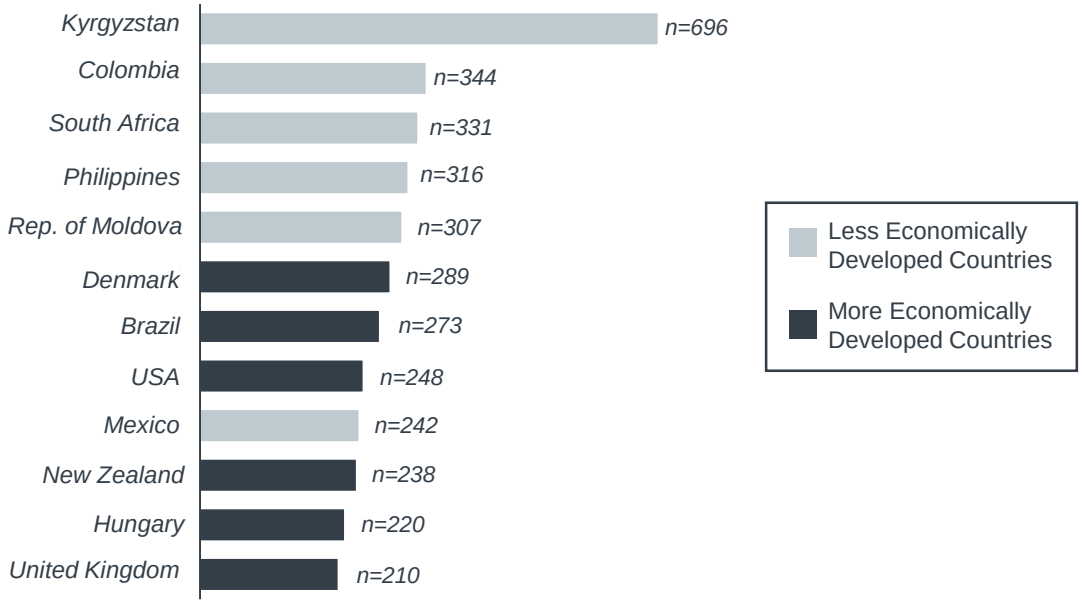
Source: Service Line Advisor research and analyses

# Appendix

# Pulmonary Disease Burdens Even the Most Resource-Rich Nations

**Highest COPD Deaths per Year by Country[1]**

*Age-standardised mortality rate, per million of population, 2001-2010*




1) World Health Organization, "The 10 most common causes of death," World Health Statistics (2011).

Source: Service Line Advisor research and analyses

# Other Post-Discharge Tactics to Reduce Pulmonary Patient Readmissions

## Focus on Non-Pharmacological Interventions to Reduce Readmissions

TACTIC #1

**Invest in Telehealth Programme**

Virtual visits, remote patient monitoring devices, and web-based communication tools offer significant potential to improve post-discharge care

**RESOURCE**

The Telehealth Primer on Chronic Disease Management provides a review of telehealth trends and applications for chronic patient populations

TACTIC #2

**Offer Pulmonary Rehabilitation (PR)**

Robust evidence indicates that PR improves chronic lung disease patients' quality of life, functional capacity, and breathing metrics

**EXAMPLE**

The Tactics for Sustainable PR Program Development brief provides insights into how PR programme leaders overcome profitability and patient adherence challenges

TACTIC #3

**Conduct an Internal Evaluation**

Conduct an internal evaluation to reduce COPD readmissions, focusing on creating a post-discharge support network

**RESOURCE**

The Playbook for Reducing COPD Readmissions provides 11 strategies to help hospitals identify internal COPD readmission drivers and reduce readmissions

TACTIC #4

**Share Prevention Burden with Community**

To decrease disease prevalence and minimise readmissions, invest in minimal-investment programmes, such as online cessation support

**RESOURCE**

The Smoking Cessation Resources Compendium provides guidance on integrating counseling as a core component of lung cancer screening programmes

Source: Service Line Advisor research and analyses

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